

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. With this amendment, claims 10 and 13 have been amended, no claims have been cancelled, and Claim 46 has been added. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier. Thus, claims 10-14, 16-20, and 46 remain pending in the application.

Claims 10-14 and 16-20 were rejected under 35 U.S.C. § 102(e) as being anticipated by Chan et al.

In response, Applicants have amended independent claims 10 and 13 to more clearly distinguish the invention. Specifically, claim 10 has been amended to recite that the laser is operable as an optical tweezers. Support for these features can be found in paragraphs [0053] of the specification. The apparatus of claim 10 and its dependent claims is significantly different from the apparatus of Chan et al. As discussed in the previous response, the laser of Chan et al. is only configured to operate as a detector, not an optical tweezers. Further, in response to the Examiner's assertion that this argument is mere attorney argument, Applicant submits for the Examiner's consideration herewith a declaration of Dr. Selena Chan, a co-inventor of the reference and instant application.

Claim 13 was amended to recite that the restriction barrier is within the first channel. Claim 13 was also amended to clarify that the barriers are configured to restrain particles having a diameter between 0.1 and 20 microns. Support for these amendments can be found in paragraphs [0044], [0045], and [0049] of the specification and Figure 1. As discussed above, Chan does not teach a restriction barrier configured to restrain movement of a single particle. The apparatus of Chan is has a closely packed channel configured to for Raman "hot spots" for passing, unattached nucleotides. Applicant submits Chan does not anticipate amended claims 10 and 13 or any of the claims which depend from these claims.

New claim 46 recites that the restriction barrier is within the first channel and that openings created by the angled walls are “large enough to capture a single particle and a second opening small enough to prevent passage of the particle but large enough to allow passage of a biomolecule.” Support for these features can be found in paragraphs [0044] and [0045] of the specification and Figure 1. The apparatus of claim 46 Chan. Chan’s “restriction barrier” having angled walls identified by the Examiner is reaction chamber 101. Reaction chamber 101 has walls that taper to match the diameter of microchannel 102. See paragraphs [0081] and [0082] of Chan. Chan does not teach a restriction barrier having angled walls within a microchannel. Further, the beads 111 in microchannel 103 do not have angled walls “large enough to capture a single particle and a second opening small enough to prevent passage of the particle but large enough to allow passage of a biomolecule.” In the apparatus of Chan, nucleic acids 109 are digested into individual nucleotides in the reaction chamber 101 and then transported to channel 103 without being attached to a particle. See paragraph [0010] of Chan. The closely packed channel 103 of Chan is configured to form “hot spots” for Raman detection, not to trap individual particles with attached biomolecules. Indeed, flowing particles of the same order in size as Chan’s packed particles would never flow through the packed particles to the detector. Thus, both the structure and the operation of the presently claimed invention is different from that disclosed in Chan.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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